AMENDMENTS TO THE CLAIMS

Please amend pending claims as indicated below. The following is a listing of claims will replace all prior versions and listing of claims in the application.

1. (Currently Amended): A robot comprising:

a motion unit;

[[an]] a two-dimensional (2D) array of detectors supported by the motion unit, each detector having a counter associated therewith, the 2D array operable to generate a frame of distance indications to one or more features in an environment in which the robot operates;

~~a memory device storing~~ data corresponding to at least one counter configured to determine a time value associated with a detection of the array of detectors;

an infrared sensor ~~operatively coupled to the memory device, the infrared sensor~~ including: (a) an infrared light source configured to produce a plurality of pulses of infrared light directed toward [[an]] the environment of the robot; and (b) at least one ~~optics~~ optic element configured to focus a plurality of reflections of the infrared light pulses from the environment of the robot to the 2D array of detectors, causing the detection of the 2D array of detectors; and

at least one processor operatively coupled to the ~~memory device~~ 2D array of detectors, the processor operable: (a) to determine ~~distance information~~ one or more features of the environment based at least in part on ~~the determined time value~~ one or more frames of distance indications; and (b) to control the motion unit of the robot to avoid the one or more detected features.

2. (Currently Amended): The robot of claim 1, ~~where~~ wherein the ~~determined~~ distance ~~information~~ indication is produced by the counter measuring a period of time to receive a reflected pulse ~~and the at least one processor is operable to determine a feature of the environment based at least in part on the determined distance information.~~

3. (Currently Amended): The robot of claim 1, ~~where~~ wherein the ~~determined~~ distance ~~information~~ indication is produced by measuring an energy of a reflected pulse up to a cutoff time.

4. (Currently Amended): The robot of claim 2, wherein the feature is indicated in an internal map of the environment.

5. (Previously Presented): The robot of claim 2, wherein the feature is a step.

6. (Previously Presented): The robot of claim 2, wherein the feature is an object in a room.

7. (Original): The robot of claim 1, wherein the robot is a robot cleaner.

8. (Currently Amended): A method for controlling a robot comprising:

~~storing data in a memory device of a robot, the data corresponding to at least one counter configured to determine a time value associated with a detection of array of detectors;~~

producing a plurality of pulses of infrared light directed toward an environment of the robot;

focusing with at least one optic <u>element</u> a plurality of reflections of the infrared light pulses from the environment of the robot to [[the]] <u>a two-dimensional (2D)</u> array of detectors~~,~~ ~~causing the detection of the 2D array of detectors~~; and<u>;</u>

<u>detecting by the 2D array of detectors the plurality of reflections of the infrared light pulses;</u>

<u>generating a frame of distance indications to one or more features in the environment;</u>

processing the ~~determined time value to determine distance information based at least in part on the determined time value~~ generated one or more frames of distance indications <u>to determine one or more features of the environment; and</u>

<u>controlling the motion of the robot to avoid the one or more features of the environment.</u>

9. (Currently Amended): The method of claim 8, wherein the ~~determined~~ distance ~~information~~ <u>indication</u> is produced by <u>a counter</u> measuring the time to receive a reflected pulse~~and; including determining a feature of the environment based at least in part on the determined distance information.~~

10. (Currently Amended): The method of claim 8, wherein the ~~determined~~ distance ~~information~~ <u>indication</u> is produced by measuring the energy of a reflected pulse up to a cutoff time.

11. (Currently Amended): The method of claim 9, wherein the feature is indicated in an internal map <u>of the environment</u>.

12. (Previously Presented): The method of claim 9, wherein the feature is a step.

13. (Previously Presented): The method of claim 9, wherein the feature is an object in a room.

14. (Previously Presented): The method of claim 8, wherein the robot is a robot cleaner.

15. (Currently Amended): A robot comprising:

~~a motion unit;~~

~~an array of detectors supported by the motion unit;~~

~~a memory device storing data corresponding to at least one counter configured to~~ ~~determine a time value associated with a detection of the detectors;~~

an infrared light source ~~operatively coupled to the memory device and~~ configured to produce a plurality of pulses of infrared light directed toward an environment of the robot;

~~at least one optic operably coupled to the memory device and configured to focus a~~ ~~plurality of reflections of the infrared light pulses from the environment of the robot to the array~~ ~~of detectors, causing the detection of the detectors; and~~

a two-dimensional (2D) array of detectors, each detector having a counter associated therewith, the 2D array operable: (a) to detect a plurality of reflections of the infrared light pulses from the environment; and (b) to generate a frame of distance indications to one or more features of the environment;

at least one processor operatively coupled to the ~~memory device~~ 2D array of detectors, the processor operable: (a) to determine ~~distance information~~ one or more features of the environment based at least in part on ~~the determined time value~~ one or more frames of distance indications; and (b) to control the motion of the robot to avoid the one or more detected features.

16. (Currently Amended): The robot of claim 15, wherein the ~~determined~~ distance ~~information~~ indication is produced by the counter measuring a period of time to receive a reflected pulse ~~and the at least one processor is operable to determine a feature of the environment based at least in part on the determined distance information~~.

17. (Currently Amended): The robot of claim 15, wherein the ~~determined~~ distance ~~information~~ indication is produced by measuring an energy of a reflected pulse up to a cutoff time.

18. (Currently Amended): The robot of claim 16, wherein the feature is indicated in an internal map of the environment.

19. (Previously Presented): The robot of claim 16, wherein the feature is a step.

20. (Previously Presented): The robot of claim 16, wherein the feature is an object in a room.

21. (Original): The robot of claim 15, wherein the robot is a robot cleaner.

22-23. (Canceled)

24. (Currently Amended): A method for controlling a robot comprising:

    ~~storing data in~~ retrieving from a memory device of [[a]] the robot~~, the data corresponding to at least one counter configured to determine a time value associated with a detection of an~~

~~array of detectors~~ <u>one or more two-dimensional (2D) frames of distance indications to one or</u>

<u>more features of an environment in which the robot operates;</u>

~~producing a plurality of pulses of infrared light directed toward an environment of the~~

~~robot;~~

~~focusing with at least one optic a plurality of reflections of the infrared light pulses from~~

~~the environment of the robot to an array of detectors, causing the detection of the detectors; and~~

processing the ~~determined time value to determine the distance information based at least~~

~~in part on the determined value~~ <u>one or more retrieved 2D frames of distance indications to</u>

<u>determine one or more features of the environment;</u>

<u>adding the one or more determined features to an internal map of the environment; and</u>

<u>controlling the motion of the robot to avoid the one or more features of the environment.</u>

25. (Canceled)

26. (Currently Amended): The method of claim 24, wherein the ~~determined~~ distance ~~information~~ <u>indication</u> is produced by measuring the time to receive a reflected pulse <u>from one or</u> <u>more features of the environment.</u>

27. (Previously Presented): The method of claim 24, wherein the ~~determined~~ distance ~~information~~ <u>indication</u> is produced by measuring the energy of a reflected pulse ~~up to a cutoff~~ ~~time~~ <u>from one or more features of the environment.</u>

28. (Currently Amended): The method of claim 25, wherein ~~the feature is~~ one or more features are indicated in [[an]] the internal map of the environment.

29. (Previously Presented): The method of claim 25, wherein the feature is a step.

30. (Previously Presented): The method of claim 25, wherein the feature is an object in a room.

31. (Original): The method claim 24, wherein the robot is a robot cleaner.

32-33. (Canceled)

34. (New) The robot of claim 1, wherein the processor is further operable to add the one or more determined features to an internal map of the environment.

35. (New) The robot of claim 1, further comprising a memory device for storing the one or more frames of distance indications.

36. (New) The robot of claim 1, wherein one or more detectors are positioned around the perimeter of the robot.

37. (New) The robot of claim 15, wherein the processor is further operable to add the one or more determined features to an internal map of the environment.

38. (New) The robot of claim 15, further comprising a memory device for storing the one or more frames of distance indications.